AGING POPULATION: NEUROSURGICAL TREATMENT OF TRAUMATIC ACUTE SUBDURAL HEMATOMA IN THE ELDERLY PATIENTS

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AUTHORS DISCLOSE THAT THERE IS NO CONFLICT OF INTEREST
INTRODUCTION

Acute subdural hematoma (aSDH):

- clot of blood between the surface of the brain and the dura mater due to rupture of vessels on the brain’s surface
- various clinical presentation: headache, neurological deficits, consciousness impairments, etc.
- related with age; falls taking general part of reasons in elder patients (Taylor et al., 2017)
- despite the development of new diagnostic and treatment methods aSDH remains the cause up to 30 percent of fatal traumatic brain injury (Taylor et al., 2017)
- in aging populations of developed countries affects patients over 60 years of age and older more frequently

This study presents the experience of one center for the treatment of aSDH in the elderly.
METHODS

- demographical and clinical data on patients ≥60 years of age diagnosed with aSDH, collected retrospectively from years 2013-17
- two study subgroups according to the age: 60-74 years and ≥75 years old (see Fig.1)

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60-74 years old (n=107)

- man 73.8%
- woman 26.2%

≥75 years old (n=113)

- man 49.6%
- woman 50.4%

Fig. 1 Gender distribution between the groups
RESULTS

S06.5 according to ICD 10 classification (n=896)

no statistically significant differences

clinical characteristics:
- cerebral, peripheral and/or coronary arteries diseases
- arterial hypertension
- history of neoplasm
- diabetes mellitus
- other comorbidities

anticoagulant agents intake:
- ASA
- acenocumarol
- warfarin
- LMWH

CT scan findings:
- tSAH
- chronic subdural hematoma/subdural hygroma
- chest contusion
- spine fracture
- ribs fracture
- upper limb fracture
- lower limb fracture
- suspicion of aspiration pneumonia

patients ≥ 60 y.o. (n=220), groups analysis

statistically significant differences

radiological signs of brain contusion on the initial head CT more frequent in patients < 75 years old (p<.05).
RESULTS

- major neurological findings at the admission are presented in Fig. 2. (Patients > 75 years old presented hemiparesis, ataxia or apraxia more often ($p<0.05$). Patients between 60-74 years old suffered from epileptic seizure before operation more frequently ($p<0.05$))

![Fig. 2 Clinical characteristics between the groups]
RESULTS

• no statistically significant differences between the type of surgical intervention (craniectomy/craniotomy), subdural drainage placement and reoperation rate between two analyzed groups (Fig.3)

Fig.3 Surgical intervention characteristics
RESULTS

• any statistically significant differences in postoperative clinical presentation between the age groups

• the length of stay in the hospital for patients 60-74 years old was significantly higher comparing to the elder patients (Mann-Whitney test: \( p=0.02 \)) and their outcome measured with use of modified Rankin Scale was better (4.7 v. 5.2; Mann-Whitney test: \( p=0.008 \)).

• the mortality rate was significantly higher in the elder group: 50.5% for patients 60-74 years old and 68.75% for elder patients \( (p<0.004) \)

<table>
<thead>
<tr>
<th></th>
<th>60-74 years old (median)</th>
<th>≥75 years old (median)</th>
<th>( p ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay in ICU (days)</td>
<td>6.0</td>
<td>2.5</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Modified Rankin Scale score</td>
<td>5.5</td>
<td>6.0</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Length of stay in hospital (days)</td>
<td>14.0</td>
<td>9.0</td>
<td>&lt;.05</td>
</tr>
</tbody>
</table>

*Table 1. Comparison of length of stay in ICU and in hospital, mRS results and mortality rate of patients with aSDH.*
DISCUSSION

- Population becomes elder globally. As consequence physicians takes care of older patients more often.

- Our findings suggest gender distribution differences between the groups what can be explained by gender depended life expectancy of the demographic characteristics.

- Our results confirm that older age is a predictive factor of unfavorable outcome after aSDH management.

- The length of stay in the hospital of our patients 60-74 years old was significantly higher comparing to the elder patients, but their outcome was better. Unfortunately the mortality rate is high for both of groups (50,5% for patients 60-74 years old and 68,75% for elder patients).

- Brain contusion on the initial head CT scan was more frequent in the younger group when the presence of the focal deficits on admission more frequent in the elder group. This findings might be associated with the higher incidence of preoperative epileptic seizure in the younger group.
SUMMARY POINTS

• The results of aSDH treatment remain unsatisfactory.

• In our study, the outcomes of treatment for patients over 75 years of age were worse than patients at the age 60-75 years old. However, the results in both groups are poor.

Followed Dr. Carlos A. Rodríguez-Alvarez

Thank you for Your attention